



Montana Fish, Wildlife & Parks

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Ref:DV073-01
February 7, 2001

TO: Environmental Quality Council, Capitol Building, Helena, 59620-1704
Dept. of Environmental Quality, Metcalf Bldg., PO Box 200901, Helena, 59620-0901
Montana Fish, Wildlife & Parks: Director's Office – Rich Clough; Fisheries Division – Karen Zackheim; Legal Unit
MT Historical Society, State Historic Preservation Office, 225 North Roberts, Veteran's Memorial Building, Helena, 59620-1201
Montana State Library, 1515 East Sixth Ave., Helena, 59620-1800
Jim Jensen, Montana Environmental Information Center, PO Box 1184, Helena, 59624
George Ochenski, PO Box 689, Helena, 59624
Wayne Hirst, Montana State Parks Foundation, PO Box 728, Libby, 59923
Montana State Parks Association, PO Box 699, Billings, 59103
Joe Gutkoski, President, Montana River Action Network, 304 N 18th Ave., Bozeman, 59715
Rep. Dee Brown, PO Box 444, Hungry Horse, 59919-0444
Sen. Jerry O'Neil, PO Box 2058, Kalispell, 59903-2058
Flathead County Commissioners, 800 S Main, Kalispell, 59901
Flathead County Library, 247 First Avenue E, Kalispell, 59901
Stan Frasier, Montana Wildlife Federation, PO Box 1175, Helena, 59624
Janet Ellis, Montana Audubon Council, PO Box 595, Helena, 59624
Arlene Montgomery, Friends of the Wild Swan, PO Box 5103, Swan Lake, 59911
Warren Illi, Flathead Wildlife, Inc., PO Box 4, Kalispell, 59903
John Winnie, Trout Unlimited, PO Box 638, Kalispell, 59903-0638
Jim Mann, The Daily Inter Lake, PO Box 7610, Kalispell, 59904
Rep. Rob Raney, 212 S. 6th, Livingston, 59047

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared for the **Abbott Creek** project. The purpose of the project is the installation of a permanent fish passage barrier and removal of hybrid fish to reduce introgression between native westslope cutthroat trout and nonnative rainbow trout in Abbott Creek, a tributary to the Flathead River.

Questions and comments will be accepted through Friday, March 9, 2001. Please direct your questions or comments to Clint Muhlfeld or Mark Deleray, Fisheries Biologists, FWP, 490 N. Meridian Road, Kalispell, MT 59901, or e-mail to cmuhlfeld@state.mt.us.

Sincerely,


Dan Vincent
Regional Supervisor

DV/nli
Enclosure

Draft

MEPA/NEPA/HB495 GENERIC CHECKLIST

PART I. PROPOSED ACTION DESCRIPTION

1. Type of Proposed State Action: Installation of a permanent fish passage barrier and removal of hybrid fish to reduce introgression between native westslope cutthroat trout and nonnative rainbow trout in Abbott Creek, a tributary to the Flathead River.

2. Agency Authority for the Proposed Action: MT Fish, Wildlife & Parks

3. Name of Project: Abbott Creek Fish Passage Barrier Project

4. Name, Address, and Phone Number of Project Sponsor (if other than the agency)

5. If Applicable:

Estimated Construction/Commencement Date: March 1, 2001

Estimated Completion Date: April 1, 2001

Current Status of Project Design (% complete): 60%

6. Location Affected by Proposed Action (county, range, and township):
Flathead County, T30N, R19W, Sections 4&5

7. Project Size: Estimate the number of acres that would be directly affected that are currently:

(a) Developed:
residential..... 0 acres
industrial 0 acres

(b) Open Space/Woodlands/
Recreation 0 acres

(c) Wetlands/Riparian
Areas..... 0 acres

(d) Floodplain..... 0 acres

(e) Productive:
irrigated cropland..... 0 acres
dry cropland..... 0 acres
forestry 0 acres
rangeland 0 acres
other..... 0 acres

8. Map/site plan: attach an original 8 1/2" x 11" or larger section of the most recent USGS 7.5' series topographic map showing the location and boundaries of the area that would be affected by the proposed action. A different map scale may be substituted if more appropriate or if required by agency rule. If available, a site plan should also be attached.

9. Narrative Summary of the Proposed Action or Project Including the Benefits and Purpose of the Proposed Action.

The Flathead River system in northwest Montana is recognized as a regional stronghold for migratory (e.g., adfluvial and fluvial) westslope cutthroat trout throughout their historic range (Liknes and Graham 1988; Shepard et al. 1984; Shepard et al. 1997). Migratory forms are important life-history strategies for maintaining genetic diversity and dispersal among populations (Rieman and McIntyre 1995), which is critical to the long-term persistence and preservation of a species (Allendorf and Leary 1988). However, populations of migratory life-history forms have declined due to genetic introgression (hybridization), habitat fragmentation, habitat degradation, and migration barriers such as dams, irrigation diversions, and culverts (Liknes and Graham 1988; Behnke 1992). Consequently, westslope cutthroat trout currently inhabit about 27.4 percent of their original range in Montana, and genetically pure populations occupy only 2.5 percent of their historic range (Liknes and Graham 1988). In response to population declines, Montana Fish, Wildlife & Parks (MFWP) and the American Fisheries Society (AFS) classified westslope cutthroat trout as a species of special concern, and the U.S. Forest Service classified them as a sensitive species.

Hybridization between native westslope cutthroat trout and nonnative rainbow trout is a leading factor contributing to the decline of genetically pure cutthroat trout populations in the upper Flathead River system. Deleray et al. (1999) reported that hybridization is prevalent in the main stem Flathead River near Columbia Falls and Kalispell. For the Columbia Falls section, 44 percent of the sample consisted of westslope cutthroat trout x rainbow trout (hybrids); and in the Kalispell section, 20 percent of the sample consisted of hybrid trout. Recent genetic surveys revealed that Abbott Creek, a tributary to the Flathead River near Martin City, supports a population of fish consisting of westslope cutthroat trout x rainbow trout hybrids (MFWP, unpublished data, Kalispell). Furthermore, MFWP conducted a radio-telemetry study to determine where and when hybrid fish spawn that were tagged in the main stem Flathead River near Columbia Falls and Kalispell during spring of 2000. Results showed that 8 of 9 (88 percent) hybrid fish tracked during the spawning period migrated to Abbott Creek and spawned in the stream (MFWP, unpublished data, Kalispell). Combined, this information suggests that Abbott Creek is a major source of hybridization in the upper Flathead River system and thus poses a threat to the long-term persistence of migratory cutthroat trout populations in the Flathead system.

We propose to install a permanent fish passage barrier in Abbott Creek to prevent hybrid adult fish from using the stream as a spawning area. In addition, we will operate a fish trap downstream of the barrier for 6 -10 consecutive years to manually remove the hybrid spawners from the population. Removal of rainbow trout and hybrids from the stream will eradicate the existing hybrid population spawning in Abbott Creek and ultimately reduce the threat of hybridization in the Flathead River system. Pending completion of a successful disease screening and authorization from FWP Fish Health Committee, live fish captured in the fish trap will be transported to a nearby close-basin lake for use in MFWP's Urban Fishing Program. The overall goal of this project is to reduce the degree of hybridization between native cutthroat trout and nonnative rainbow trout in the upper Flathead River system. Failure to immediately suppress and/or eradicate rainbow and hybrid populations in the Flathead system will likely result in further population declines of cutthroat trout. The proposed action is consistent with the Flathead Lake

and River Fisheries Co-management Plan (2001-2010) developed by Montana Fish, Wildlife & Parks (MFWP) and the Confederated Salish and Kootenai Tribes (CSKT). With the goal of reducing nonnative fish to favor native fish in the system.

10. Listing of any other local, state or federal agency that has overlapping or additional jurisdiction.

(a) Permits:

<u>Agency Name</u>	<u>Permit</u>	<u>Date Filed/#</u>
MT Fish, Wildlife & Parks	Stream Protection Act (124)	To be filed
USFS	Special Use Permit	To be filed

b) Funding:

<u>Agency Name</u>	<u>Funding Amount</u>
BPA	
Hungry Horse Mitigation	

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

<u>Agency Name</u>	<u>Type of Responsibility</u>
USFS	Land Manager

10. List of Agencies Consulted during Preparation of the EA:
USFS – Hungry Horse Ranger District, Fisheries Department

PART II. ENVIRONMENTAL REVIEW

A. Evaluation of the Impacts of the Proposed Action Including Secondary and Cumulative Impacts on the Physical and Human Environment:

PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACTS				Can Impacts Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant *		
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?			X			1b.
c. Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1d.
e. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

1b. Less than 1/10 acre of soil material will be disturbed and displaced to set barrier footers and wing-walls into the streambank.

1d. There will be temporary short-term increases in total suspended solids during the construction phase and shortly following installation. During construction, all reasonably applicable best management practices will be employed to minimize sedimentation to Abbott Creek. Example BMPs include silt fences, straw bails, and timing of construction activities (e.g., low water). The barrier will be designed and installed to accommodate bedload movement and prevent streambank and streambed degradation.

PHYSICAL ENVIRONMENT

2. <u>AIR</u> Will the proposed action result in:	IMPACTS				Can Impacts Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant *		
a. Emission of air pollutants or deterioration of ambient air quality?		X				
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture or temperature patterns, or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (Attach additional pages of narrative if needed):

PHYSICAL ENVIRONMENT (continued)

3. <u>WATER</u> Will the proposed action result in:	IMPACTS				Can Impacts Be Mitigated*	Comments Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen, turbidity or pathogens?			X			3a.
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of flood water or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in the risk of contamination of surface or groundwater?		X				
i. Violation of the Montana Non Degradation Statute?		X				
j. Effects on any existing water right or reservation?		X				
k. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
l. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
m. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

3a. There will be temporary short-term increases in total suspended solids during the construction phase and shortly following installation.

PHYSICAL ENVIRONMENT (continued)

4. <u>VEGETATION</u> Will the proposed action result in:	IMPACT				Can Impacts Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?		X				
b. Alteration of a plant community?			X			4b.
c. Adverse effects on any unique, rare, threatened, or endangered plant species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X				
f. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation Resources (Attach additional pages of narrative if needed):

4b. Disturbing small sections of the bank will not cause a change in diversity of community composition, but it will displace a few woody shrub species that can be easily transplanted following construction. All shrubs mechanically removed during project construction will be stockpiled on-site for transplant following construction. A native, certified weed-free broadcast seed mix will be applied to disturbed soils following construction. Willow sprigs will be planted in the fall when the plants are dormant and no longer producing carbohydrates. Planting during the dormant season will ensure energy is expended in the root system, increasing success rate of transplanted material.

PHYSICAL ENVIRONMENT

5. <u>FISH/WILDLIFE</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X			5b.
c. Changes in the diversity or abundance of non-game species?		X				
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?			X			5e.
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				
h. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish/Wildlife Resources (Attach additional pages of narrative if needed):

5b. There will be minor changes to the fish community in the Flathead River system associated with the proposed action. The spawning population of rainbow trout and hybrids using Abbott Creek will ultimately be eliminated. Consequently, this may reduce the distribution and abundance of nonnative rainbow trout and hybrids inhabiting the Flathead River system. Therefore, the community of fish in the Flathead River will likely shift towards a native species westslope cutthroat trout assemblage.

5e. Installation of a fish migration barrier in Abbott Creek will eliminate upstream access by migratory fish species. Fish distribution and abundance surveys indicate that Abbott Creek supports nonnative populations of rainbow trout, hybrids, and eastern brook trout. Migratory bull trout do not use Abbott Creek for spawning, rearing, or overwintering habitat and would not be affected by the barrier. Eastern brook trout occupy the upper portions of Abbott Creek and are primarily resident (nonmigratory); thus, eastern brook trout would not be affected by the barrier.

HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Increases in existing noise levels?		X				
b. Exposure of people to serve or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other: __						

Narrative Description and Evaluation of the Cumulative and Secondary Noise/Electrical Effects (Attach additional pages of narrative if needed):

HUMAN ENVIRONMENT

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflicted with a designated natural area or area of unusual scientific or educational importance?		X*				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other: __						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

* This project will be located on USFS land within the recreation section of the Wild and Scenic Area of the Flathead River.

HUMAN ENVIRONMENT

8. <u>RISK/HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. Other: __						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards (Attach additional pages of narrative if needed):

HUMAN ENVIRONMENT

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other: __						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact (Attach additional pages of narrative if needed):

HUMAN ENVIRONMENT

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Have an effect upon the local or state tax base and revenues?		X				
c. Result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Result in increased used of any energy source?		X				
e. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities (Attach additional pages of narrative if needed):

HUMAN ENVIRONMENT

11. <u>AESTHETICS/RECREATION</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X*				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report)	X					11c.
d. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation (Attach additional pages of narrative if needed):

* This structure will not be visible from the Flathead River.

11c. The proposed action may reduce the opportunity to harvest rainbow trout in the Flathead River. Maintenance of current

levels of angler use should be possible with the proposed action. We do not anticipate a reduction in the quality and quantity of fishing in the Flathead River because the availability of suitable habitat for cutthroat trout will be increased with a decrease in the abundance of rainbow trout. Because hybridization and competition by rainbow trout is considered to be the primary factor limiting native fish abundance in the river, the size of the overall rainbow trout population will be reduced.

HUMAN ENVIRONMENT (continued)

12. <u>CULTURAL/HISTORICAL RESOURCES</u>	IMPACT				Can Impacts Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
Will the proposed action result in:						
a. Destruction or alteration of any site, structure or object of prehistoric, historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural or historic values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. Other: _						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources (Attach additional pages of narrative if needed):

SIGNIFICANCE CRITERIA

13. <u>SUMMARY EVALUATION OF SIGNIFICANCE</u>	IMPACT				Can Impacts Be Mitigated*	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
Will the proposed action, considered as a whole:						
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Other:						

Narrative Description and Evaluation of the Summary Evaluation of Significance (Attach additional pages of narrative if needed):

PART II. ENVIRONMENTAL REVIEW (Continued)

Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action, whenever alternatives are reasonably available and prudent to consider, and a discussion of how the alternatives would be implemented:

1. No action: Allow rainbow trout and hybrids to continue spawning in Abbott Creek. Research on hybridization and competition between rainbow and cutthroat trout has demonstrated that Abbott Creek is a major source of hybrids and rainbow trout in the upper Flathead River system. Management of wild, native, self-sustaining populations of cutthroat trout to maintain genetic uniqueness is a primary goal of the Flathead Lake and River Fisheries Co-management Plan (2001-2010) and the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout in Montana (MFWP 1999). If the goal of these plans is to increase and protect native trout populations (i.e., westslope cutthroat trout and bull trout), then a "no action" management approach will not allow managers to reach the desired goal.
2. Remove the hybrid population from Abbott Creek using a migrant weir trap assembly. Adult spawners will be manually removed from the stream for approximately 6 -10 years. This alternative will not successfully remove the existing hybrid population because migrant traps are not 100% successful in trapping all adult spawners during spring runoff. High spring flows and debris loads often preclude workers from maintaining the trap throughout the entire spring. Past research efforts in Abbott Creek demonstrated that several radio-tagged fish moved through the weir without being captured, while others avoided the trap and never ascended the stream. If trapping efforts were ceased after 10 years, rainbows and hybrids would likely recolonize the stream and eventually reach present day population numbers.
3. Install a permanent upstream fish barrier and manually remove spawners with a fish trap for 6-10 consecutive years. Prevention of upstream access to spawning habitat and removal of adult spawners will eradicate the rainbow trout and hybrid population inhabiting Abbott Creek and ultimately reduce the threat of hybridization in the Flathead River system. Pending completion of a successful disease screening and authorization from FWP Fish Health Committee, live fish captured in the fish trap will be transported to a nearby close-basin lake for use in MFWP's Urban Fishing Program. The overall goal of this project is to reduce the degree of hybridization between native cutthroat trout and nonnative rainbow trout in the upper Flathead River system. Failure to immediately suppress and/or eradicate rainbow and hybrid populations in the Flathead system will likely result in further population declines of cutthroat trout. The proposed action is consistent with the Flathead Lake and River Fisheries Co-management Plan (2001-2010) developed by Montana Fish, Wildlife & Parks (MFWP) and the Confederated Salish and Kootenai Tribes (CSKT).

3. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

N/A

4. Based on the significance criteria evaluated in this EA, is an EIS required? YES / NO If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

No EIS is required. Because of the simplicity of this project and the anticipated public acceptance, we believe that an EA is an appropriate level of analysis.

5. Describe the level of public involvement for this project if any and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

This project has been presented to the Flathead Chapter of Trout Unlimited and to a few local sportsmen and fishing guides. A general description of this process was discussed during public scoping and in development of the Flathead Fisheries Co-management Plan.

6. Duration of comment period if any:

Thirty days – February 7 – March 9, 2001.

7. Name, title, address and phone number of the person(s) responsible for preparing the EA:

Clint Muhlfeld and Mark Deleray, Fisheries Biologists
MT Fish, Wildlife & Parks
490 North Meridian Road
Kalispell, MT 59901
cmuhlfeld@state.mt.us

PART III. NARRATIVE EVALUATION AND COMMENT

The overall goal of this project is to reduce the degree of hybridization between native cutthroat trout and nonnative rainbow trout in the upper Flathead River system. Research on hybridization and competition between rainbow and cutthroat trout has demonstrated that Abbott Creek is a major source of hybridization between these two species in the upper Flathead River system. Installation of a permanent fish barrier and subsequent removal of adult spawners in Abbott Creek will eradicate the rainbow trout x westslope cutthroat trout population and ultimately reduce the threat of hybridization in the Flathead River system. Failure to immediately suppress and/or eradicate rainbow and hybrid populations in the Flathead system will likely result in further population declines of cutthroat trout. The proposed action is consistent with the Flathead Lake and River Fisheries Co-management Plan (2001-2010) developed by Montana Department of Fish, Wildlife & Parks (MDFWP) and the Confederated Salish and Kootenai Tribes (CSKT).

PART IV. EA CONCLUSION SECTION

Hybridization between native westslope cutthroat trout and nonnative rainbow trout is a leading factor contributing to the decline of genetically pure cutthroat trout populations in the upper Flathead River system. It is believed that the proposed project will benefit the public and native westslope cutthroat trout populations in the Flathead River system by reducing the degree of hybridization between nonnative rainbow trout and native westslope cutthroat trout.

References:

- Allendorf, F.W. and R.F. Leary. 1988. Conservation and distribution of genetic variation in a polytypic species, the cutthroat trout. *Conservation Biology* 2:170-184.
- Behnke, R.J. 1992. Native trout of western North America. American Fisheries Society, Monograph 6. Bethesda, Maryland.
- Deleray, M., L. Knotek, S. Rumsey, and T. Weaver. 1999. Flathead Lake and river fisheries status report. DJ Report No. F-78-R-1 through 5. Montana Department of Fish, Wildlife and Parks, Kalispell.
- Liknes, G.A. and P.J. Graham. 1988. Westslope cutthroat trout in Montana: life history, status and management. Pages 53-60 in R.E. Gresswell, editor. Status and management of cutthroat trout. American Fisheries Society, Symposium 4, Bethesda, Maryland.
- Rieman, B.E., and J.D. McIntyre. 1995. Occurrence of bull trout in naturally fragmented habitat patches of varied size. *Transactions of the American Fisheries Society* 124:285-296.
- Shepard, B.B., K.L. Pratt, and P.J. Graham. 1984. Life histories of westslope cutthroat trout and bull trout in the upper Flathead River Basin, Montana. Montana Department of Fish, Wildlife and Parks, Helena.
- Shepard, B.B., B. Sanborn, L. Ulmer, and D.C. Lee. 1997. Status and risk of extinction for westslope cutthroat trout in the upper Missouri River basin, Montana. *North American Journal of Fisheries Management* 17:1158-1172.